



Integrated Warning Team (IWT) Workshop

Streamlining the Tornado Survey Process -NWS Perspective



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Outline

- **Damage Survey Process**
 - Background
 - Mission
 - Application
- **Wind Damage Types**
 - Straight-line winds
 - Microburst/Downburst
 - Tornado
 - Tropical Wind



Damage Survey Process

Background

- We will make announcements about damage surveys in NWSChat.
- EMs can help us by scoping out damage locations ahead of time.
- Media can meet us during surveys. We will be happy to do media interviews and press conferences after our survey is complete and we have reported our results to the office.





Damage Survey Process

Our Mission

- Documentation of wind/tornado/hail event for official record-keeping
- Determine the type of damage
 - Tornado
 - Straight-line Wind
 - Microburst
 - Hurricane/Tropical Storm
- Determine where the strongest winds occurred/often coincides with the worst damage
 - Provide a wind estimate and EF-scale rating
- Determine the path length/path width
- Determine beginning/end time of tornado and locations of track.
- Document significant/noteworthy damage



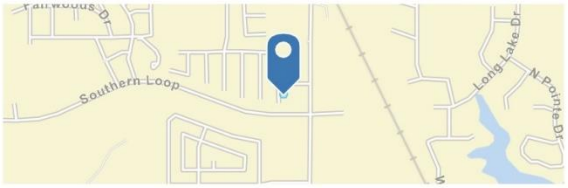
Survey123 Application

× DAT - TOR/Wind 📶 ☰



Utilize 'Send Now' Option **ONLY** when confidence in cell signal is High

Point *

📍 32°21'N 93°43'W ± 23 m ⊗



Image



Event Type *

☒ Tornado ☐ TSTM Wind ☐ Tropical Wind ☐ Other

Storm Date *

📅 Monday, March 8, 2021 ⊗ ↺

🕒 1:00 PM

Event ID

Damage Indicator

Manufactured Home - Single Wide (MHSW) ⌵ ↺

Degree of Damage

Unit rolls on its side or upside down; remains essentially intact ⌵ ↺

Wind Speed:

☐ 84 ☐ 90 ☐ 95 ☒ 98 ☐ 100 ☐ 105 ☐ 110 ☐ 114

☐ EF3+ EF1

damage_dir

N/A ⌵

injuries

⊗ +

deaths

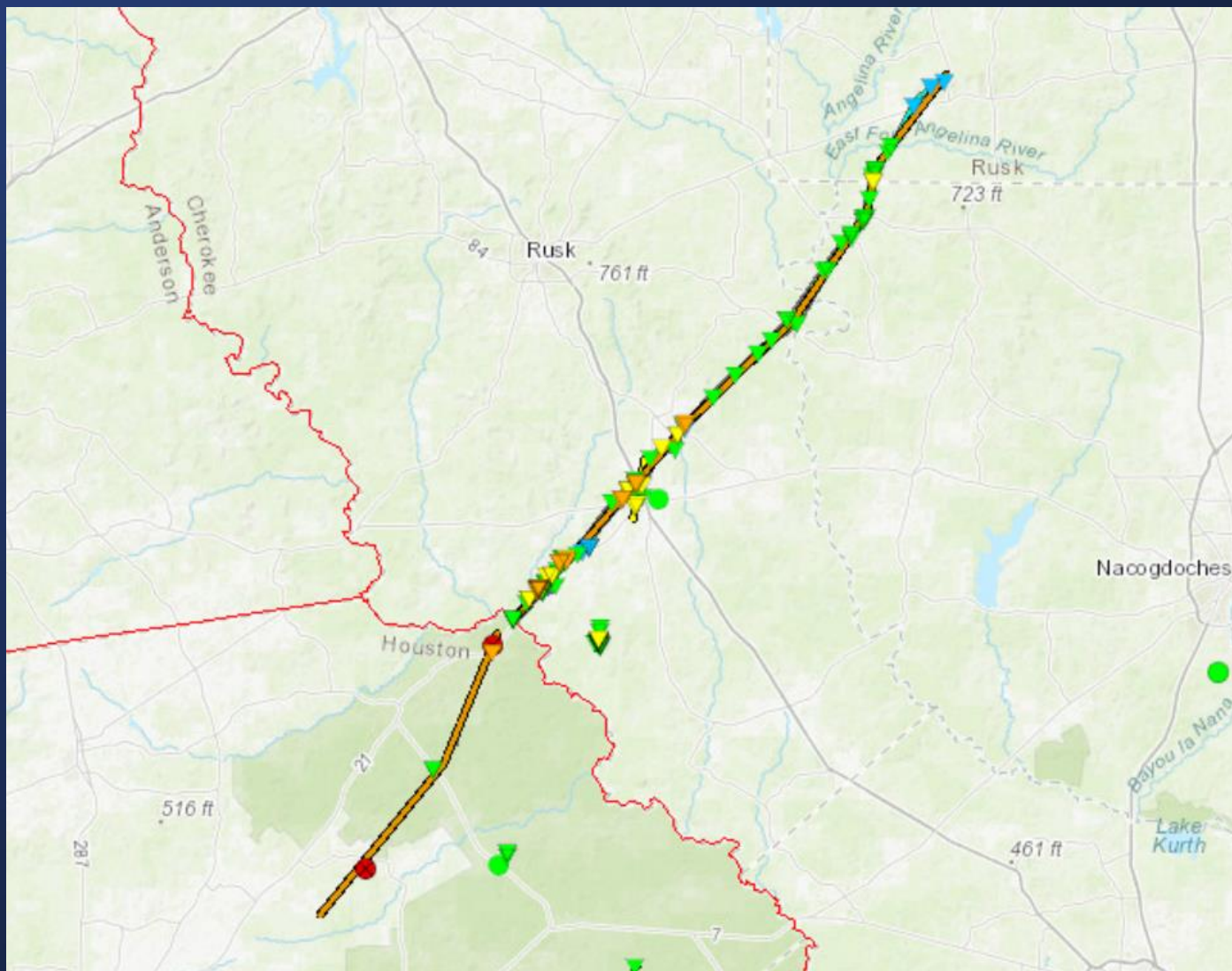
⊗ +

comments





Damage Assessment Toolkit





Storm Summary Information

- StoryMap with track maps posted on our homepage
— https://www.weather.gov/shv/past_events

April 24-25, 2019: Tornadoes in Deep East Texas and Northern Louisiana

Overview

Tornado #1: San Augustine, TX

Tornado #2: Converse, LA

Tornado #3: Mooringsport, LA

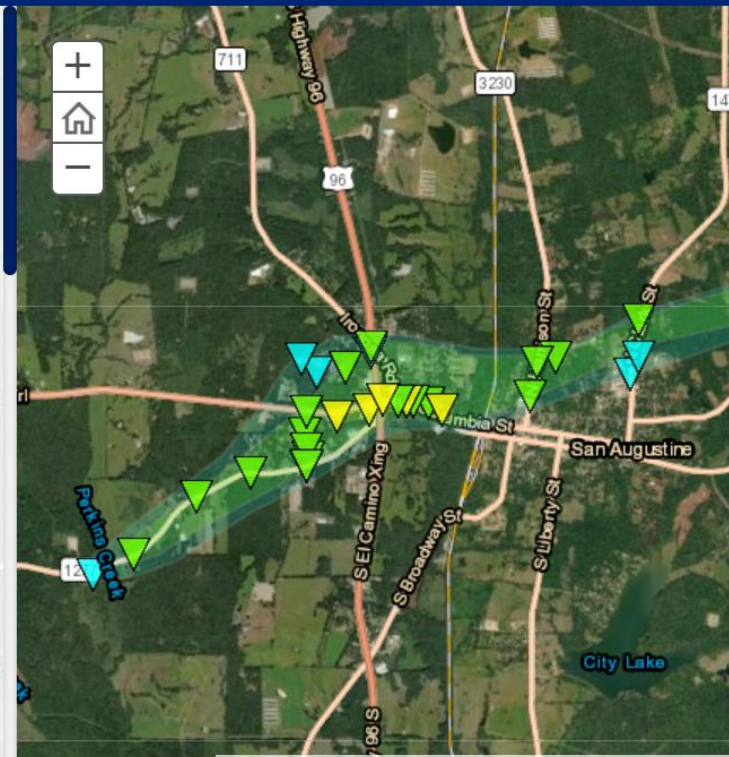
Tornado #4: Lucky, LA

Click below to download this track:

[KMZ file](#) [SHP file](#)

START POINT	3 miles WSW of San Augustine, San Augustine County, TX
END POINT	6 miles ENE of San Augustine, San Augustine County, TX
RATING / PEAK WIND	EF2 130 mph
DATE	April 24, 2019
TIME	11:13pm-11:23pm CDT
LENGTH / WIDTH	8.61 miles / 1100 yards
FATALITIES/ INJURIES	None

The tornado began along County Road 1277 where it uprooted and snapped numerous trees as it paralleled the road. It widened and moved across Cedar Road where extensive tree damage led to structural damage to 54 structures in a neighborhood. As it continued east-northeast, it ripped the awning off a gas station and snapped the the





Tornado vs. Downburst Wind Damage

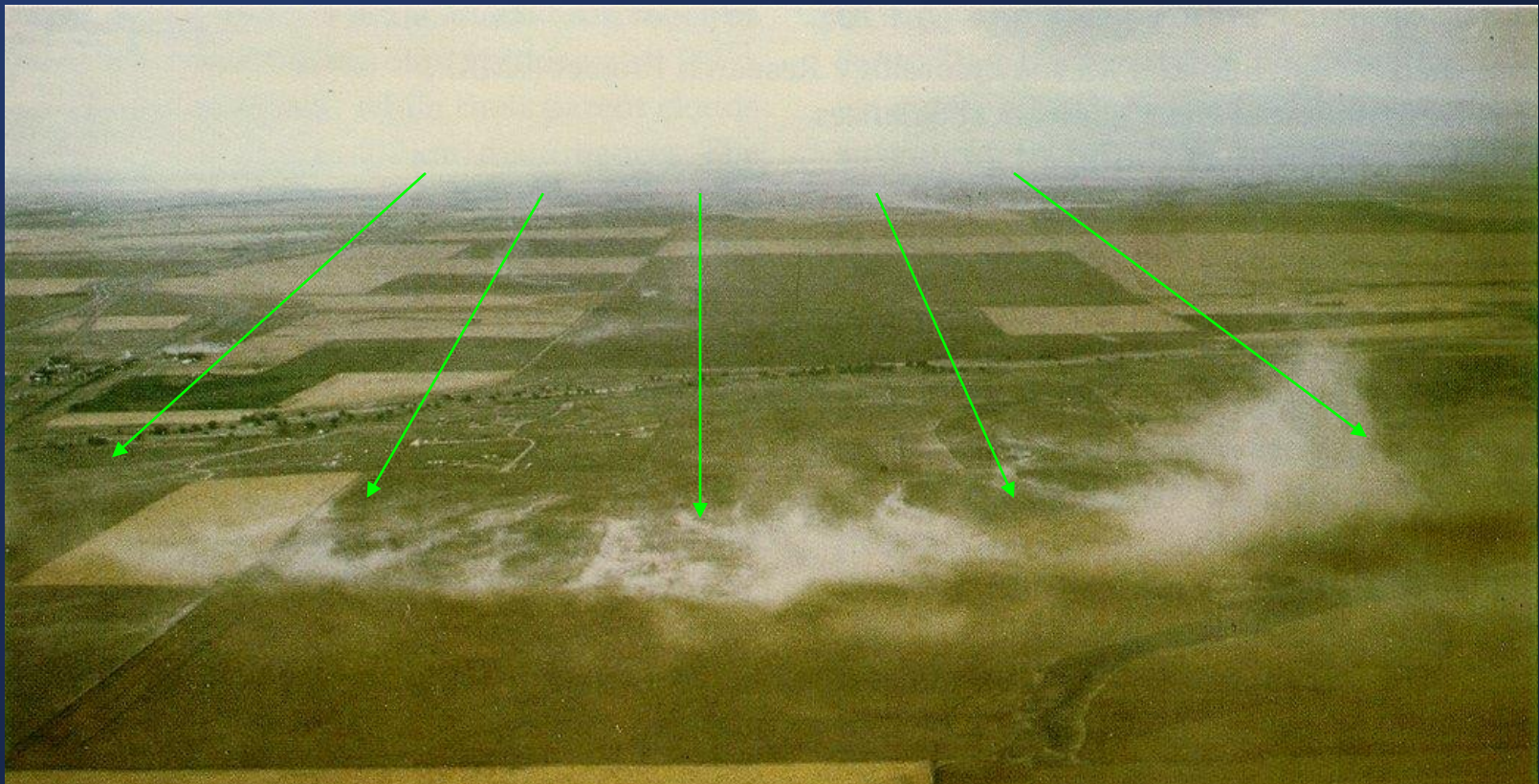
Characteristics

Characteristic	Tornado	Downburst
Aspect Ratio	Long and thin	Short and wide
Damage Gradient	High	Low
Trajectories of Debris	Narrow/convergent	Broad/divergent
Appearance of Damage	Chopped up, chaotic	Laid out neatly
Visual Ground Cues	Swirls, mud splattered on walls	No swirls, no mud
Visual Cues from Aircraft	Vortex mark, herringbone tree damage	'Starburst' pattern from microburst



Straight-Line Wind Damage

- Downbursts exhibit straight or divergent damage patterns, and are often fairly widespread.



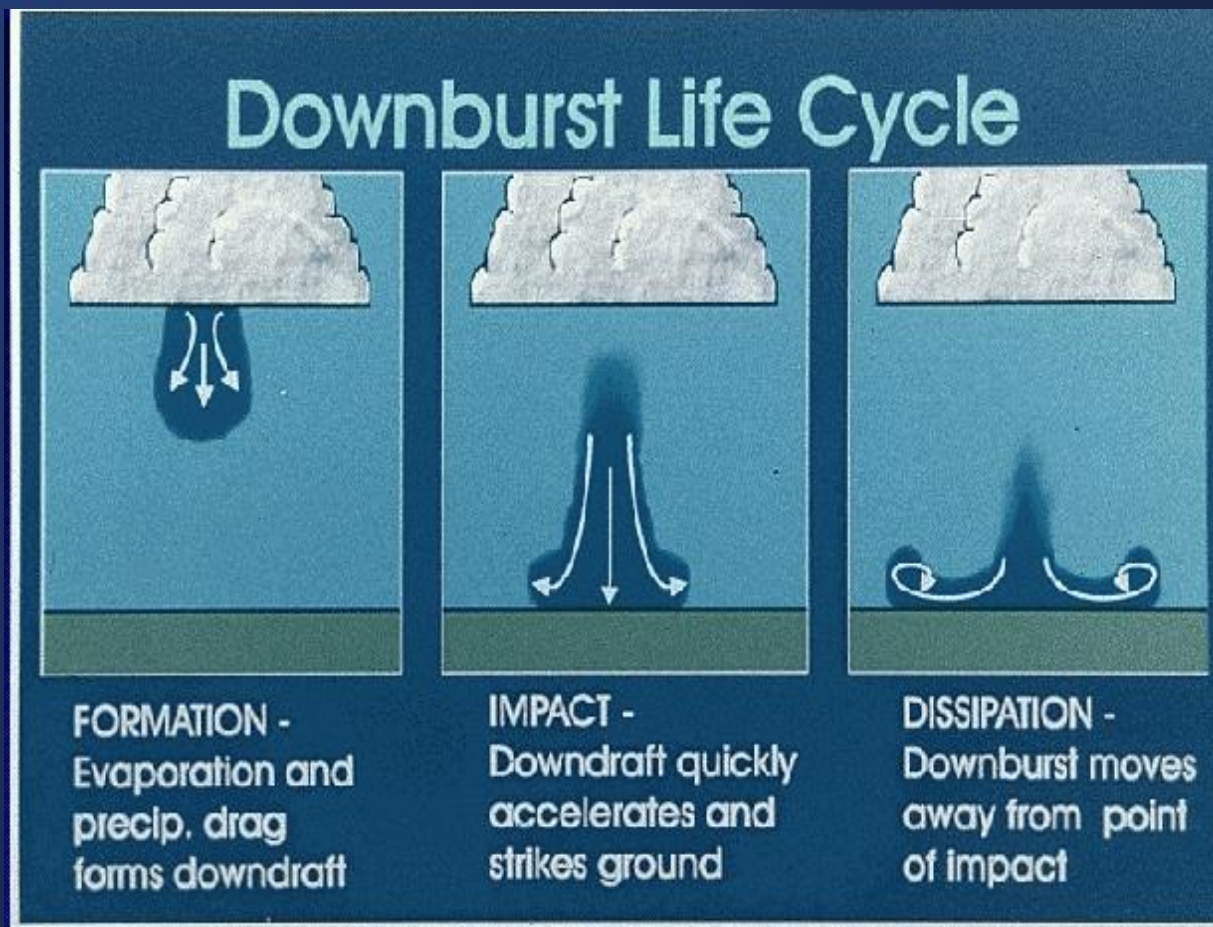


Straight-Line Wind Damage





What is a Downburst?



Strong downdraft produced by a strong or severe thunderstorm that causes damaging winds on or near the ground

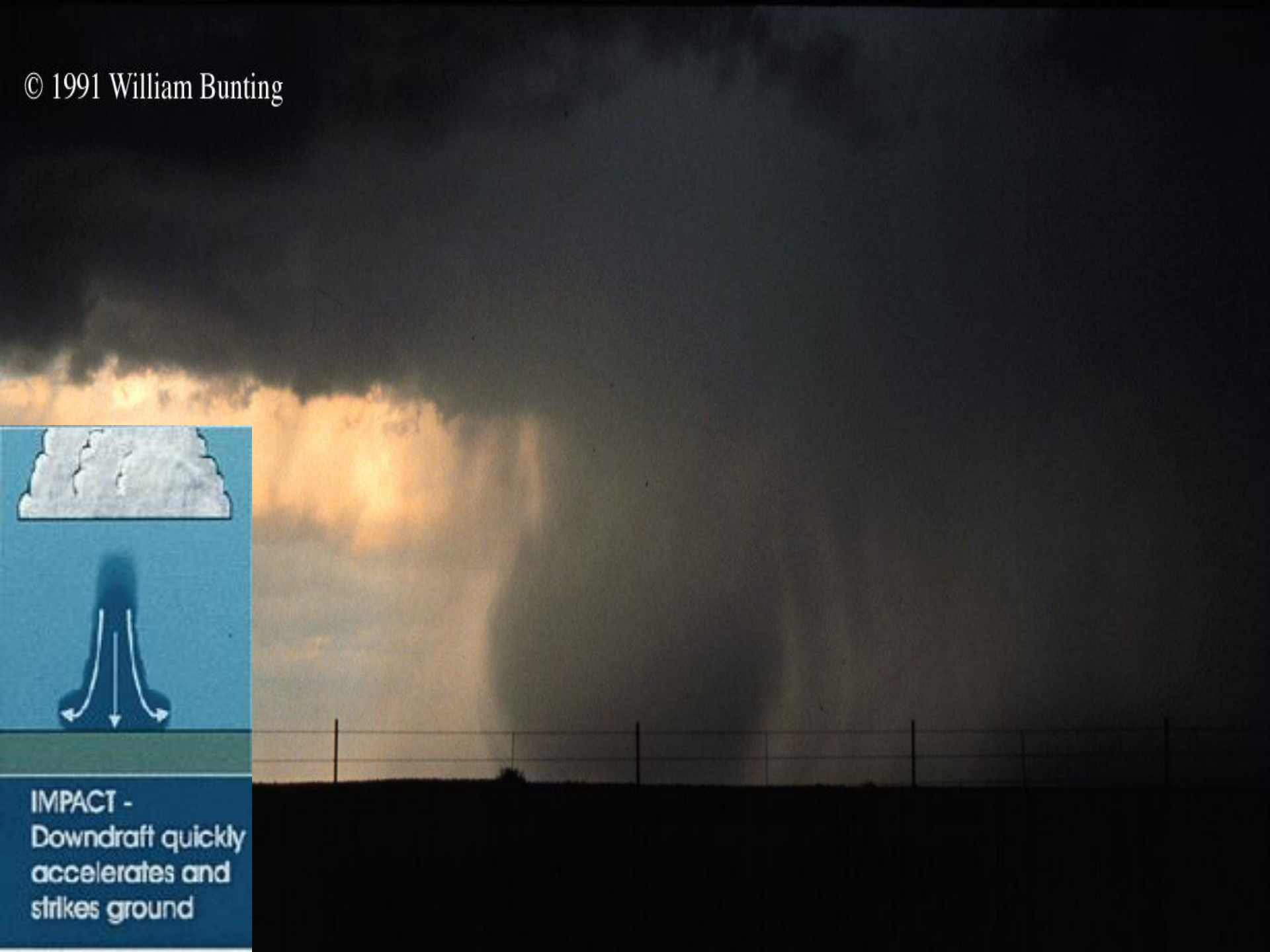
Can produce tornado-like damage in terms of severity

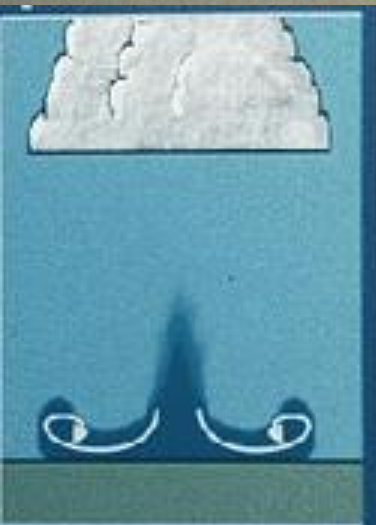


FORMATION -
Evaporation and
precip. drag
forms downdraft



© 1991 William Bunting





DISSIPATION -
Downburst moves
away from point
of impact



Downburst Example



Credit:
Sampson County, NC Schools



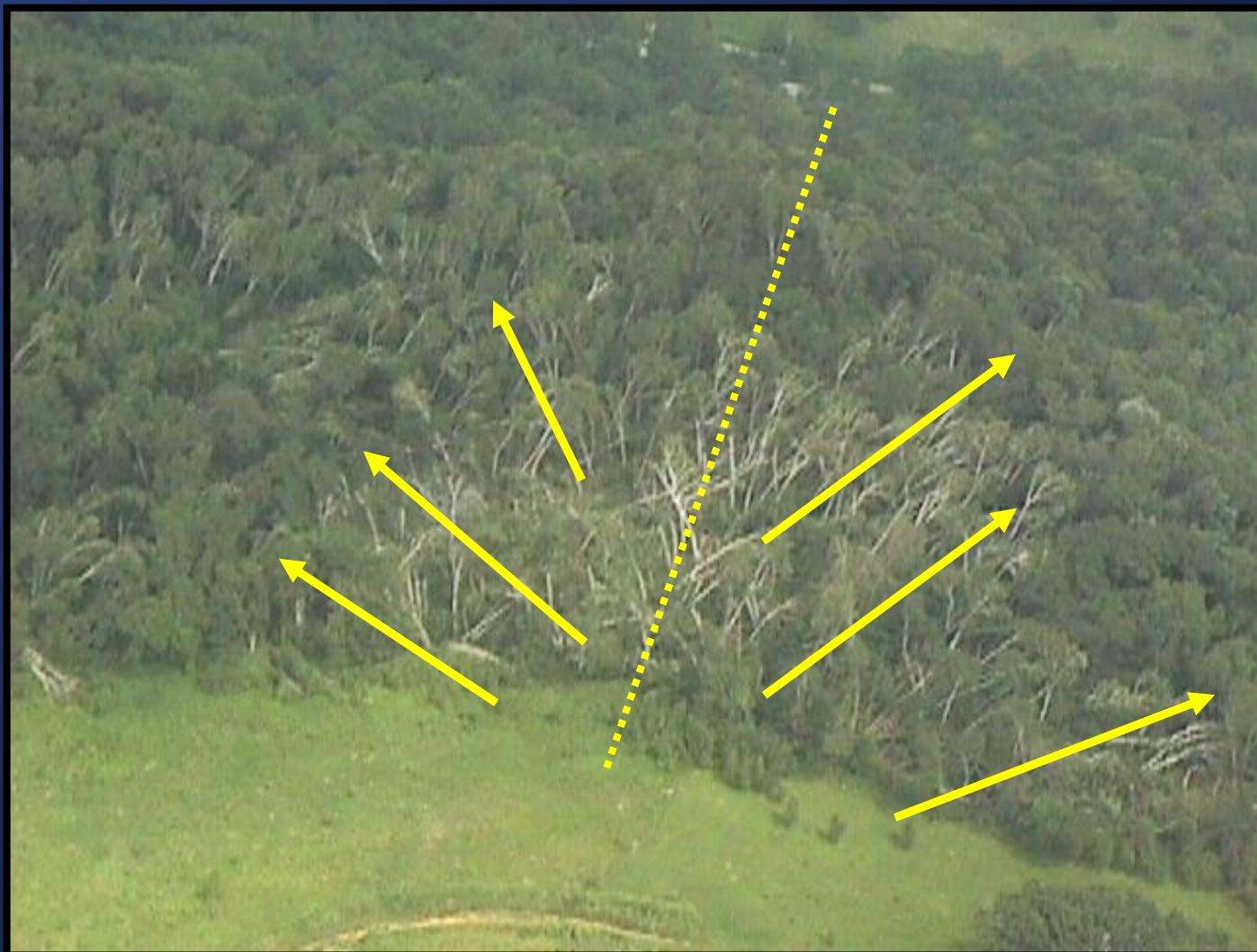
Weather-Ready Nation
National Oceanic and Atmospheric Administration



NWSShreveport



Downburst Example

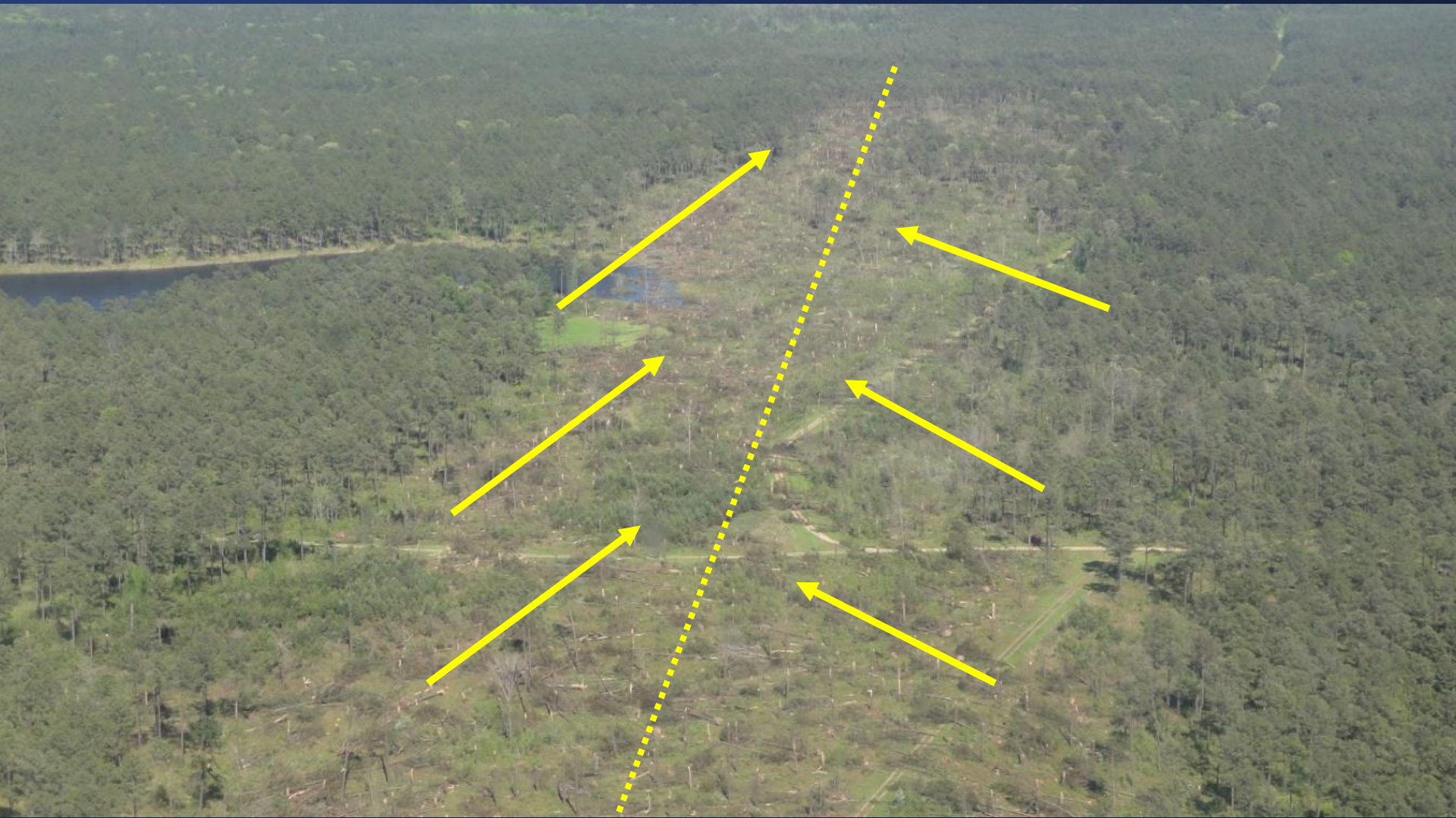


Texarkana - May 22, 2008





Tornado Damage





Tornado Damage





Tornado Damage





Tornado Damage





Hurricane Damage



Beauregard Parish, LA – Hurricane Laura (2020)



Hurricane Damage



Gulf County, FL – Hurricane Michael (2018)



Damage Survey Process

Summary

- Let's work together to share data!
 - We often can't reach all of the damage locations.
 - Our surveys are ground surveys, sometimes roads are closed or there are no roads to access damage.
 - Aerial surveys are a huge help to us.
- Help us find damage and share it...
 - Take pictures and email them to us.
 - Helps with our determination of if a survey is necessary.
 - Saves us time by knowing exact locations of damage points.



Thank You! Questions?

Email: Charles.Woodrum@noaa.gov



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BONUS SLIDES



Mobile Home Safety

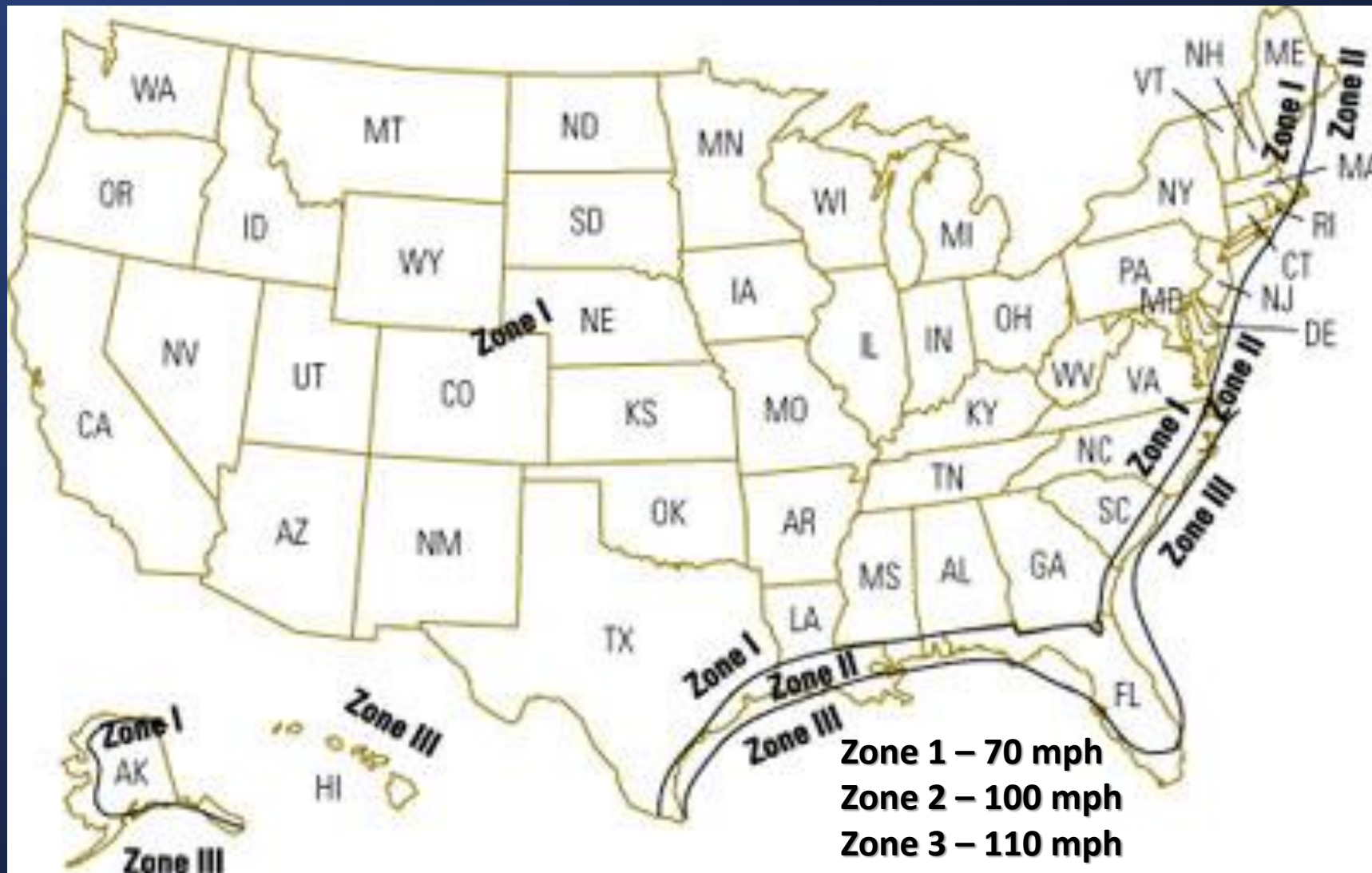
The Challenge





Mobile Home Safety

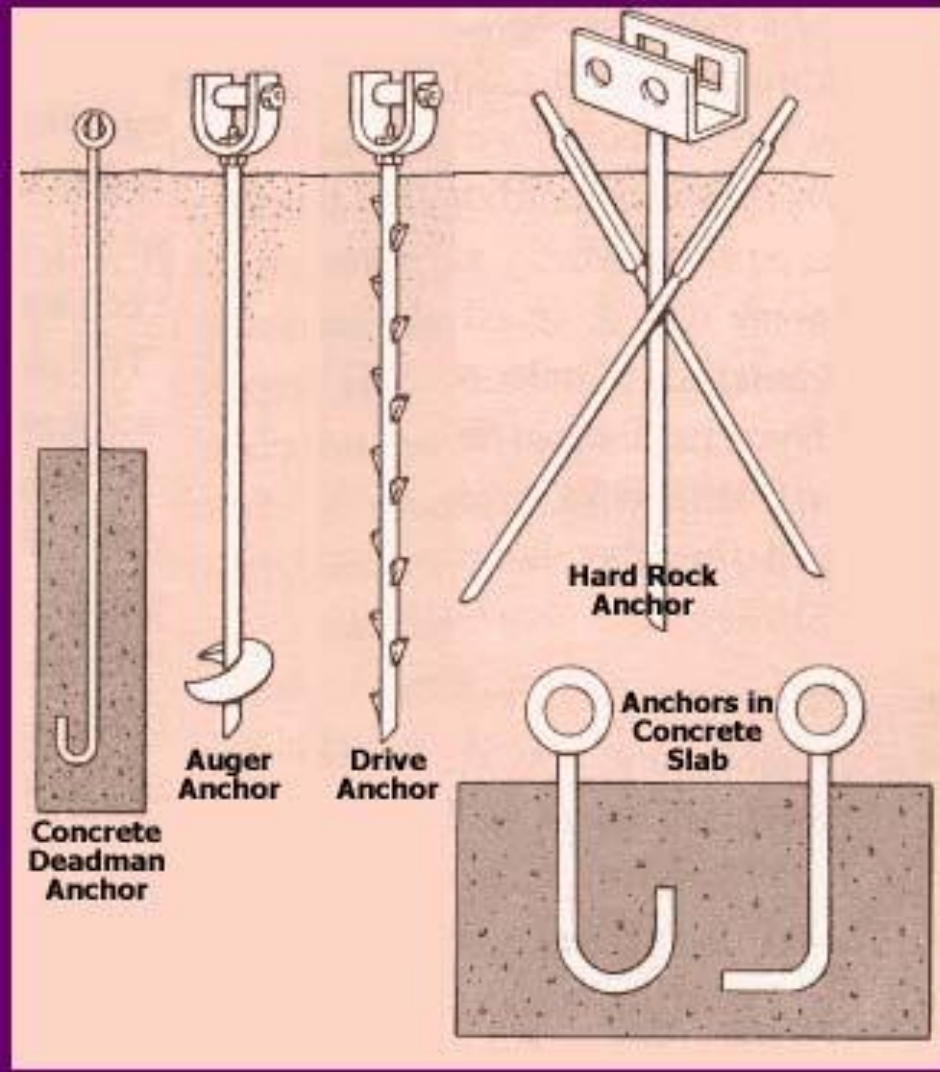
The Challenge





Mobile Home Safety

Anchoring





Sharing Success Stories



EF-2 Tornado Damage in Trout, LA - LaSalle Parish



Sharing Success Stories



Tornado Damage from EF-3 Tornado in Alto, TX – Cherokee County



Mobile Home Safety

Sheltering





Mobile Home Safety

Prompting Action

SHELTERS

Overnight Locations:

- Salvation Army 24 hour shelter for homeless or near homeless with a capacity of 200. Additional space for 250 will be available in the Disaster Shelter. (903) 592-4361.
- Red Cross Open on demand, dependent upon declared emergency.
Matt Brown, Disaster Program Manager, (903) 581-7981 or (903) 216-6786

Daytime Locations

- Salvation Army 633 N. Broadway. Open 24 hours, 7 days a week. (903) 592-4361
- YMCA 225 South Vine with a capacity of 50 depending on daycare needs. Membership not required during emergency situations. (903) 593-7327
- Broadway Square Mall and others Public areas with air conditioning. On City bus route
- Movie Theatres
- Churches Check with individual church regarding activities and capabilities.
- Public Schools Depends on a declared emergency and whether school is in session



Mobile Home Safety

Messaging

The poster features a dark grey background with a red silhouette of a landscape including trees and houses. A large, dark grey tornado is shown striking one of the houses. The title 'TORNADO SAFETY' is in large white letters, with 'FOR MOBILE HOMES' and a mobile home icon below it. The NOAA and National Weather Service logos are in the top corners. A list of three safety instructions is in the center, and a Weather Ready Spring logo and website information are at the bottom.

TORNADO SAFETY

FOR MOBILE HOMES

- If you are in a mobile home, it is **NOT** safe, and you **MUST** seek an alternative shelter.
- Make plans ahead of time to stay with friends or family who live in a sturdy building.
- Your last resort is to lie low and flat on your stomach with your hands over your head in a ditch or ravine.

For more information, visit:
weather.gov/tornado



Mobile Home Safety

Messaging

Step 1 (Today)- Monitor National Weather Service forecasts and make a tornado sheltering plan or review your current plan. Know your evacuation route from your home and how long it takes to evacuate to a safer place.

Step 2 (Day Before Severe Weather)- When tornadoes are predicted, coordinate with family and friends to spend time at their home when the storms threaten or identify a community place to go to.

Step 3 (Day of Severe Weather)- When a **Tornado Watch** is issued, that is the time to evacuate to your safe place. In many cases, when a **Tornado Warning** is issued, it may be too dangerous to take your evacuation route, so it's best to evacuate your mobile home before warnings are issued and storms hit.



What can we do together?

- What are good shelters in your community?
- Who staffs a shelter?
- Can you open shelters for a Tornado Watch?
- Can we share your designated shelters?





Mobile Home Safety

You can replace the possessions, but you can't replace a life...





Mobile Home Safety

If all of our work saves one life, it was worth our time!

